UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,581	08/11/2006	David B. Jackson	010-0011B	7193

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EXAMINER
ZHE, MENG YAO

ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/530,581	JACKSON, DAVID B.
	Examiner	Art Unit	
	MENGYAO ZHE	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 February 2007</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-31</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-31</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 February 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20110208

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12/11/08 7/4/07 6/19/09 7/18/09 8/29/09 11/14/09 1/9/10 1/29/10 2/23/10 3/10/10 3/13/10 7/21/10 1/13/11 1/27/11.

DETAILED ACTION

1.   Claims 1-31 are presented for examination.

Specification

2.   The disclosure is objected to because of the following informalities: the status of all related applications mentioned in the specification needs to be updated with the appropriate status, specifying the U.S. application serial number or Patent number (Pg 1, second paragraph).

    Appropriate correction is required.

Information Disclosure Statement

3.   The applicant cited NPL documents but failed to send copies of them as part of the prior art. The Examiner has found them and has included them with the office action. Specifically, Concepts for Resource Reservation in Advance by Wolf et al., Design and Evaluation of a Resource Selection Framework for Grid Applications by Liu et al., and A Language Modeling Framework for Resource Selection and Results Merging by Si et al have been included. However, applicant is reminded to include all NPLs cited in the IDS from here on.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

5.   Claims 30-31 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

6.   As per claim 30, it recites a "system"; however, it appears that the system would

reasonably be interpreted by one of ordinary skill in the art as software, per se, failing to

be tangibly embodied or include any recited hardware as part of the system (i.e. the

system merely contains modules that could be interpreted as software modules).

Software alone is directed to a non-statutory subject matter. Applicant is advised to

amend the claims to include a hardware (i.e. processor and memory) to overcome the

101 rejection.

7.   Claim 31 recites a "media". However, the specification fails to provide clear

support for this limitation and only states that it can be any type of medium. Without

clear support or antecedent basis for "media", it is unclear if applicant intends to claim

something boarder than storage media (e.g. RAM, ROM, CD-ROM, disks, etc.) and

cover signals, carrier waves and other forms of transmission media. Therefore, the

limitation media is not limited to physical articles or objects which constitute a

manufacture within the meaning of 35 U.S.C. 101 and enable any functionality of the

instructions carried thereby to act as a computer component and realize their

functionality. As such, the claim is not limited to statutory subject matter and is therefore

non- statutory. Applicant is advised to amend the specification to define "media" (e.g.

RAM, ROM, CD-ROM, disks) to overcome the 101 rejection.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-6, 12-18, 25-31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hornick, Patent No. 6,912,533 (hereafter Hornick).

10.   As per claims 1, 30, 31, Hornick teaches a method of dynamically adjusting a

time frame of a reservation in a compute environment, the method comprising:

        receiving from a requestor a request for a reservation of resources in the cluster

environment (Column 11, lines 2-10; Column 11, lines 60-65; Column 15, lines 10-15: it

is obvious that when the request is taken, the resource on the computer system has

been reserved);

        evaluating resources within the cluster environment to determine if a time frame

for a reservation can be improved (Column 14, lines 14-20); and

if the time frame for the reservation can be improved, then migrating the
reservation from the first group of resources at one time to a second group of resources
at a second time (Column 15, lines 7-23).

11.   As per claim 2, Hornick teaches wherein the cluster environment is one of an
enterprise compute farm, a cluster and a grid (Column 9, lines 41-55).

As per claim 3, Hornick teaches wherein the reservation is used to guarantee a
response time of a job according to cluster environment attributes (Column 13, lines 25-
40: guarantee in the sense that it reserves a time spot for the request).

12.   As per claim 4, Hornick teaches wherein the time frame for a reservation further
comprises one of the earliest possible time to start a reservation, an exact time to start a
reservation, and a time duration of a reservation (Column 13, lines 25-30).

13.   As per claim 5, Hornick teaches wherein the improved time frame for a
reservation is one of an expanded duration time for the reservation or a contracted
duration of time for the reservation (Column 15, lines 7-13).

14.   As per claim 6, Hornick teaches wherein the improved time frame for a
reservation comprises optimizing a response time for jobs submitted within the
reservation (Column 15, lines 7-13: it is obvious that if the time can be improved for the
entire request, jobs within the request would have a better response time in the sense
that some of them can be processed faster).

15.   As per claim 12, Hornick does not specifically teach wherein the first group of

resources and the reservation for the second group of resources overlap in space and

time.

However, Hornick teaches in general that if another computer system can

perform the request faster, then the request is moved to the second computer. In the

specific instance where the request is immediately processed at a time that is within the

original reservation time, it would have been obvious to one having ordinary skill in the

art at the time of the applicant's invention that the two reservations would overlap in

space and time.

16.   As per claim 13, Hornick teaches wherein evaluating resources further comprises

identifying resources that currently meet requestor criteria or which could meet

requestor criteria through modifying the resources (Column 12, lines 1-10).

17.   As per claim 14, Hornick teaches wherein the request comprises at least one of a

requirement and a preference (Column 11, lines 60-65).

As per claim 15, Hornick teaches wherein the requirement and preference relate to at

least one of a start time, a response time, optimization, quality of service, resource

quantity, cost and time duration (Column 13, lines 25-30; Column 16, lines 13-15).

18.   As per claim 16, Hornick teaches wherein the request comprises at least one

request criteria of at least one of: computer operating system, software, network

configuration information, file system configuration and memory requirements (Column

11, lines 60-67).

19.　　As per claim 17, Hornick teaches further comprising, after migrating the reservation, providing an access list on the reservation so as to guarantee to the requestor a response time for submitted jobs.

20.　　As per claim 18, Hornick teaches wherein the access list comprises both credential-based data and performance or QOS-based data.

21.　　As per claim 25, Hornick teaches wherein evaluating resources to improve the time frame is based on a per-reservation policy (Column 14, lines 40-48).

22.　　As per claim 26, Hornick teaches wherein the per-reservation policy is at least one of an administrator policy, a user-based policy, a policy of never taking an action, a policy of always taking an action and a cost-based policy (Column 16, lines 10-15).

23.　　As per claim 27, Hornick does not specifically teach wherein the requester may identify the request as a self-optimizing request.

　　　　However, since self-optimizing requests are commonly sent by the user for the purpose of increasing efficiency, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Hornick such that the requester can identity the request as self-optimizing, because it allows an increase in processing.

24.　　As per claim 28, Hornick does not specifically teach wherein a requestor is charged more for a self-optimizing request.

However, since charging extra to a user for special services provided is often performed in the field of resource management for the purpose of making profits, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Hornick so that the system may charge extra when specialty requests are received, including self-optimizing requests.

25.   Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hornick, Patent No. 6,912,533 (hereafter Hornick) in view of Jones et al., Patent No. 6,003,061 (hereafter Jones).

26.   As per claim 7, Hornick does not specifically teach dynamically modifying the second group of resources according to the requested reservation.

However, Jones teaches dynamically modifying the second group of resources according to the requested reservation for the purpose of satisfying request requirements (Column 15, lines 1-19).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Hornick with the specifics of modifying the second group of resources according to the requested reservation for the purpose of satisfying request requirements, as taught by Jones, because it allows the system to satisfy request requirements.

27.   As per claim 8, Hornick teaches reserving the modified second group of resources (Column 15, lines 10-16).

28.   As per claim 9, Jones teaches wherein modifying the second group of resources

further comprises modifying attributes of the second group of resources so as to meet

requirements of the request (Column 15, lines 1-19).

29.   Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hornick, Patent No. 6,912,533 (hereafter Hornick) in view of Johansson et al., Patent

No. 6,333,936 (hereafter Johansson).

30.   As per claim 10, Hornick does not specifically teach wherein evaluating

resources further comprises identifying accessible reserved resources and free

resources.

       However, Johansson teaches a system having the ability to identify accessible

reserved resources and free resources for the purpose of better resource management

(Column 10, lines 15-25).

       It would have been obvious to one having ordinary skill in the art at the time of

the applicant's invention to modify the teachings of Hornick with the specifics of having

the ability to identify accessible reserved resources and free resources, because it

allows for better management of resources.

31.   As per claim 11, Hornick teaches wherein the accessible reserved resources are

resources which are contained within a reservation to which the requestor has

ownership of or priority access to.

32.   Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hornick, Patent No. 6,912,533 (hereafter Hornick) in view of Keil et al., Pub. No.

2003/0088457 (hereafter Keil).

33.   As per claim 19, Hornick does not specifically teach wherein the request for

resources comprises a required criteria and a preferred criteria.

        However, Keil teaches wherein the request for resources comprises a required

criteria and a preferred criteria for the purpose of prioritizing request requirements (Para

67).

        It would have been obvious to one having ordinary skill in the art at the time of

the applicant's invention to modify the teachings of Hornick with the specifics of wherein

the request for resources comprises a required criteria and a preferred criteria, as

taught by Keil, because it allows for a system to prioritize request requirements.

34.   As per claim 20, Hornick teaches wherein the reservation of the first group of

resources meets the required criteria (Column 13, lines 25-40; Column 14, lines 14-20:

the resouce group 1 meets the deadline, just that resource group 2 can perform the

request in a better time frame).

35.   As per claim 21, Hornick teaches wherein evaluating resources within the cluster

environment to determine if the time frame can be improved further comprises

evaluating resources to determine if at least one of the preferred criteria can be met by migrating the reservation in time (Column 14, lines 14-20).

36.   As per claim 22, Hornick teaches wherein the determination of whether the time frame can be improved includes a comparison of a cost of migrating the reservation from the first group of resources at the first time to the second group of resources at the second time with the improved time frame gained from meeting at least one of the preferred criteria (Column 14, lines 60-65).

37.   As per claim 23, Hornick teaches wherein the cost comprises at least one of: provisioning nodes, dynamically allocating data and network access and allocating software licensing associated with customizing resources to meet the requirement of the requestor (Column 16, lines 14-15).

38.   As per claim 24, Hornick teaches wherein the reservation of first group of resources is only migrated if the cost of migrating the reservation is less than the benefits of the improved time frame gained by meeting at least one of the preferred criteria (Column 14, line 60-Column 15, line 5).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MENGYAO ZHE whose telephone number is (571)272-6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer N. To/   /Mengyao Zhe/
Patent Examiner, Art Unit 2195